

## Claims

1. A high frequency heating apparatus in that a microwave of 5.8 GHz is irradiated to an object in a heating chamber in order to heat the object;  
5 wherein a plurality of pieces of wave guides having feeding ports for emitting the microwave are mounted to a cavity partitioning the heating chamber.

10 2. The high frequency heating apparatus according to Claim 1, wherein a wall face of the cavity arranged with the feeding port is constituted by upper and lower faces, or the upper face and a side face, or the side face and the lower face of the heating chamber.

15 3. The high frequency heating apparatus according to Claim 1, wherein two pieces of the feeding ports are provided to the upper face of the heating chamber by at least two pieces of the wave guides arranged at an upper wall of the cavity.

20 4. The high frequency heating apparatus according to Claim 3, wherein the at least two pieces of wave guides at the upper wall of the cavity are arranged vertically to direct long sides of cross-sectional faces of the wave guides in an up and down direction.

5. The high frequency heating apparatus according to Claim 4, wherein a face heater is arranged at a region of the upper wall of the cavity excluding a region of mounting the wave guides arranged vertically.

25 6. A high frequency heating apparatus comprising:  
a high frequency generating portion; and  
a heating chamber constituted by a ceiling, a side wall and a floor portion for heating to process a heated object by applying a high frequency wave from the high frequency generating portion;

30 wherein a wide range wave guide in a shape of a parallelepiped constituted by including a number of feeding ports is provided on a rear side of the heating chamber, and the high frequency generating portion is provided at immediate proximity of the

wide range wave guide of the shape of the parallelepiped.

7. The high frequency heating apparatus according to Claim 6, wherein the wide range wave guide in the shape of the parallelepiped is constituted by a size widened substantially over an entire face of the floor portion and the number of feeding ports are provided on a rear side of the floor portion to direct to a side of the floor portion.

8. The high frequency heating apparatus according to Claim 6, wherein the wide range wave guide in the shape of the parallelepiped is constituted by a size widened substantially over an entire face of the ceiling and the number of feeding ports are provided on a rear side of the ceiling to direct to a side of the ceiling.

9. The high frequency heating apparatus according to any one of Claims 6 through 8, wherein a frequency of the high frequency wave supplied from the high frequency generating portion is 5.8 GHz.

10. The high frequency heating apparatus according to any one of Claims 6 through 9, wherein sizes of the number of pieces of feeding ports are smaller at a vicinity of the high frequency generating portion and the remoter from the high frequency generating portion, the larger the sizes.

11. A high frequency heating apparatus for heating an object to be heated, comprising:

a heating chamber for containing the object;

25 a high frequency generating portion for supplying a high frequency wave to the heating chamber;

wherein the high frequency generating portion includes a first high frequency generating portion for generating the high frequency wave having a frequency of 2.45 GHz and a second high frequency generating portion for generating the high frequency wave 30 having a frequency of 5.8 GHz.

12. The high frequency heating apparatus according to Claim 11, further

comprising:

a first inverter circuit for supplying a drive power to the first high frequency generating portion;

5 a second inverter circuit for supplying a drive power to the second high frequency generating portion; and

a drive control portion for simultaneously or alternately driving the first high frequency generating portion and the second high frequency generating portion by the inverter circuits.

10 13. The high frequency heating apparatus according to Claim 11, further comprising:

a single inverter circuit for supplying a drive power to the first high frequency generating portion and the second high frequency generating portion; and

15 a drive control portion for alternately switching to feed electricity to drive the first high frequency generating portion and the second high frequency generating portion.

14. The high frequency heating apparatus according to any one of Claims 11 through 13, further including:

20 an upper side feeding port provided at an upper face of the heating chamber for introducing the high frequency wave into the heating chamber; and

a lower side feeding port provided at a lower face of the heating chamber for introducing the high frequency wave into the heating chamber;

25 wherein the high frequency wave from the first high frequency generating portion or the second high frequency generating portion is introduced individually from respectives of the upper side feeding port and the lower side feeding port.

15. The high frequency heating apparatus according to Claim 14, further comprising:

30 a partition plate for dividing a space of the heating chamber upward and downward.

16. The high frequency heating apparatus according to Claim 15, wherein the

partition plate includes a high frequency heat generating member for generating heat by being irradiated with the high frequency wave.

17. The high frequency heating apparatus according to any one of Claims 14  
5 through 16, wherein the high frequency wave from the second high frequency generating portion is introduced into the heating chamber from the upper side feeding port of the heating chamber.

18. The high frequency heating apparatus according to any one of Claims 11  
10 through 17, wherein the heating chamber includes a heating chamber main body having an opening portion, and an opening/closing door for openably and closably covering the opening portion, and at least one of portions of the heating chamber main body and the opening/closing door opposed to each other is formed with a choke for preventing leakage of a radio wave; and

15 wherein the choke shields the high frequency waves respectively from the first high frequency generating portion and the second high frequency generating portion.

19. A method of controlling a high frequency heating apparatus which is a method of controlling a high frequency heating apparatus for heating to process a heated  
20 object by supplying a high frequency wave from a high frequency generating portion to a heating chamber containing the heated object;

wherein the high frequency wave having a frequency of 2.45 GHz and the high frequency wave having a frequency of 5.8 GHz are simultaneously or alternately supplied from the high frequency generating portion to the heating chamber.

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20. The method of controlling a high frequency heating apparatus according to Claim 19, wherein the high frequency wave having either one of the respective frequencies is outputted at an initial stage of heating and the high frequency wave having other of the respective frequencies is started to output after elapse of a predetermined time period or after reaching a predetermined temperature from starting to heat the heated object.

21. The method of controlling a high frequency heating apparatus according to Claim 19 or 20, wherein when the high frequency waves having the respective frequencies are simultaneously outputted, an output of at least either one of the respective high frequency waves is restricted such that a total of a drive power for outputting the high frequency waves does not exceed a rated power of the high frequency heating apparatus.